

SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY*

Product name: PARALOID[™] Edge XL-195

Issue Date: 07/27/2018 Print Date: 07/30/2018

THE DOW CHEMICAL COMPANY^{*} encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: PARALOID™ Edge XL-195

Recommended use of the chemical and restrictions on use Identified uses: Coatings product

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY* Agent for Rohm and Haas Chemicals LLC 400 ARCOLA ROAD COLLEGEVILLE PA 19426-2914 UNITED STATES

Customer Information Number:

215-592-3000 SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300 Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification

GHS classification in accordance with 29 CFR 1910.1200 Flammable liquids - Category 3 Acute toxicity - Category 4 - Oral Serious eye damage - Category 1 Skin sensitisation - Category 1 Specific target organ toxicity - single exposure - Category 3

Label elements Hazard pictograms



Signal word: DANGER!

Hazards

Flammable liquid and vapour. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation.

Precautionary statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ eye protection/ face protection.

Response

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. If skin irritation or rash occurs: Get medical advice/ attention.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 1,3-Cyclohexanedicarboxaldehyde This product is a substance.

Component	CASRN	Concentration
(cis,trans)-1,3-Cyclohexanedicarboxaldehyde	55309-54-1	>= 40.0 - <= 50.0 %
(cis,trans)-1,4-Cyclohexanedicarboxaldehyde	33424-83-8	>= 35.0 - <= 45.0 %
3-Cyclohexene-1-carboxaldehyde	100-50-5	>= 1.0 - < 5.0 %
Naphtha, petroleum, hydrotreated light	64742-49-0	>= 0.1 - < 1.0 %
Cyclohexanecarboxaldehyde	2043-61-0	>= 1.0 - <= 5.0 %
Related reaction products	Trade secret	<= 5.0 %

4. FIRST AID MEASURES

Description of first aid measures General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.

Eye contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth unless the person is fully conscious.

Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause

lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material: Carbon dioxide (CO2) Water spray Dry chemical Foam

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture Hazardous combustion products: No data available

Unusual Fire and Explosion Hazards: Vapors can travel to a source of ignition and flash back. Heated material can form flammable or explosive vapors with air. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition.

Advice for firefighters

Fire Fighting Procedures: EXPLOSION HAZARD. Fight advanced fires from a protected location. Cool closed containers exposed to fire with water spray. Remain upwind. Avoid breathing smoke. Contain run-off.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: MATERIAL IS A POTENTIAL SENSITIZER. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations.

Environmental precautions: WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. NOTE: Spills on porous surfaces can contaminate groundwater.

Methods and materials for containment and cleaning up: Eliminate all ignition sources. Evacuate personnel to safe areas. Ventilate the area. Floor may be slippery; use care to avoid falling. Soak up with inert absorbent material (e.g. sand, silica gel, polypropylene absorbent). Do not absorb in sawdust or other combustible material. Contaminated organic material (paper, wood etc) may be dangerously combustible. Contaminated organic material may generate heat which can result in a fire. Sweep up or vacuum up spillage and collect in suitable container for disposal. Wet thoroughly with water then seal for disposal. No sparking tools should be used. Avoid breathing vapor. Avoid all contact. NOTE: Spills on porous surfaces can contaminate groundwater.

7. HANDLING AND STORAGE

Precautions for safe handling: This material is a potential sensitizer. Keep container closed. Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Use non-sparking tools and grounding cables when transferring. Wash after handling and shower at end of work period. Rags, steel wool or waste soaked with this product may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water-filled container.

Conditions for safe storage: Material is air-sensitive. Store under nitrogen. Avoid temperature extremes during storage; ambient temperature preferred. Store away from excessive heat (e.g. steampipes, radiators), from sources of ignition and from reactive materials. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Store out of direct sunlight in a cool place. Keep containers tightly closed in a cool, well-ventilated place. Avoid all ignition sources. Ground all metal containers during storage and handling.

Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container.

Storage stability

Storage temperature: < 40 °C (< 104 °F)

Other data: CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations. Dispose empty container in a sanitary landfill or by incineration as allowed by state and local authorities.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
3-Cyclohexene-1-	Dow IHG	TWA	5 ppm
carboxaldehyde Naphtha, petroleum,	OSHA Z-1	TWA	2,000 mg/m3 500 ppm
hydrotreated light			

Exposure controls

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical

requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Appearance	
Physical state	liquid clear
Color	Colorless to yellow
Odor	aldehyde
Odor Threshold	No data available
рН	Not applicable
Melting point/range	-59 °C (138 °F)
Freezing point	No data available
Boiling point (760 mmHg)	<250 °C (482 °F)
Flash point	45 °C(113 °F) closed cup
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	1.06 at 20 °C (68 °F)
Water solubility	<0.5 g/L
Partition coefficient: n- octanol/water	log Pow: 0.9 Measured
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	140.14 g/mol

9. PHYSICAL AND CHEMICAL PROPERTIES

Percent volatility 100 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Contaminated organic material may generate heat which can result in a fire.

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions: Stable under recommended storage conditions. Elevated temperatures can cause hazardous polymerization. Polymerization can be catalyzed by: Acids.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: Strong acids. Strong bases. Air.

Hazardous decomposition products: No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

LD50, Rat, 1,678 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, > 5,000 mg/kg

Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Vapor from heated material may cause respiratory irritation. For narcotic effects: No relevant data found.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

Prolonged contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

May cause drying and flaking of the skin.

Serious eye damage/eye irritation

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization

Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation. Route of Exposure: Inhalation

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity

No relevant data found.

Teratogenicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

(cis,trans)-1,3-Cyclohexanedicarboxaldehyde

Acute inhalation toxicity Rat, male and female, 4 Hour, dust/mist, > 5.22 mg/l No deaths occurred at this concentration.

(cis,trans)-1,4-Cyclohexanedicarboxaldehyde

Acute inhalation toxicity

Rat, male and female, 4 Hour, dust/mist, > 5.22 mg/l No deaths occurred at this concentration.

3-Cyclohexene-1-carboxaldehyde

Acute inhalation toxicity The LC50 has not been determined.

Naphtha, petroleum, hydrotreated light Acute inhalation toxicity

Typical for this family of materials. LC50, Rat, 6 Hour, vapour, > 12.0 mg/l

Cyclohexanecarboxaldehyde

Acute inhalation toxicity

The LC50 has not been determined.

Related reaction products

Acute inhalation toxicity

The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Cyprinus carpio (Carp), static test, 96 Hour, 26 mg/l

LC50, Gobiocypris rarus (Rare gudgeon), semi-static test, 96 Hour, 65.1 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 89 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, 17 mg/l

Toxicity to bacteria

EC50, activated sludge, 30 min, > 100 mg/l, OECD 209 Test

Chronic aquatic toxicity

Chronic toxicity to aquatic invertebrates NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.225 mg/l

Persistence and degradability

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 81.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.28 mg/mg

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). **Partition coefficient:** n-octanol/water(log Pow): 0.9 Measured

Mobility in soil

Potential for mobility in soil is very high (Koc between 0 and 50). **Partition coefficient (Koc):** 11 - 17 Estimation by liquid chromatography

13. DISPOSAL CONSIDERATIONS

Disposal methods: For disposal incinerate this material at a facility that complies with local, state, and federal regulations for handling reactive material.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	RESIN SOLUTION
UN number	UN 1866
Class	3
Packing group	III
Marine pollutant	No
Transport in bulk	Consult IMO regulations before transporting ocean bulk
according to Annex I or II	
of MARPOL 73/78 and the	
IBC or IGC Code	

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312 Flammable (gases, aerosols, liquids, or solids)

Acute toxicity (any route of exposure) Serious eye damage or eye irritation Respiratory or skin sensitisation Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This material does not contain any components with a CERCLA RQ.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California Prop. 65

WARNING: This product can expose you to chemicals including Ethylbenzene, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System

HMIS

Health	Flammability	Physical Hazard
3	2	1

Revision

Identification Number: 11124223 / 1001 / Issue Date: 07/27/2018 / Version: 10.1 Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
	Contaminants
TWA	Time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the

German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada): ECx - Concentration associated with x% response: EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response: ERG - Emergency Response Guide: GHS - Globally Harmonized System: GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 -Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level: NOELR - No Observable Effect Loading Rate: NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA -Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA -Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.